

REMARKS

The Office Action dated July 27, 2007 has been received and carefully noted. The above amendments to the claims, and the following remarks, are submitted as a full and complete response thereto.

Claims 1, 5, 10, 14, and 19, are amended to more particularly point out and distinctly claim the subject matter of the present invention. Claims 4 and 13 are cancelled without prejudice or disclaimer. Support for the amendments is found at least in paragraph [0027] of the present specification and the cancelled claims. No new matter is added. Claims 1-3, 5-12 and 14-24 are respectfully submitted for consideration.

As a preliminary matter, Applicants note that page 2 of the Office Action acknowledges the claim for foreign priority. However, the Office Action indicates that the certified copies of the priority documents have not been received. Applicants respectfully submit that certified copies of the priority documents have been filed for this application on February 3, 2006 as evidenced by enclosed copy of the stamped PTO receipt. Reconsideration of the acknowledgement of the receipt of the certified copies is respectfully requested.

The Office Action rejected claims 1-21, 23 and 24 under 35 U.S.C. 102(b) as being anticipated by US Patent No. 6,128,328 to Schilling (Schilling). Applicants submit that Schilling fails to disclose or suggest all of the features recited in any of the pending claims.

Claim 1, from which claims 2, 3, 5-9 and 23 depend, is directed to a cellular communication system including at least one cell. The cell includes a coverage layer having a fixed coverage area provided by at least one carrier. A capacity layer includes at least one carrier, each carrier in the capacity layer having a dynamically variable coverage area. The number of carriers in the capacity layer is variable, to thereby dynamically vary the capacity of the cell.

Claim 10, from which claims 11, 12, 14-18 and 24 depend, is directed to a method of configuring a cellular communication system. A coverage layer for a cell is determined, having a fixed coverage area provided by at least one carrier. A capacity layer for the cell, includes at least one carrier, each carrier in the capacity layer having a dynamically variable coverage area. The number of carriers in the capacity layer is variable, to thereby dynamically vary the capacity of the cell.

Claim 19 from which claims 20-22 depend, is directed to a base station of a mobile communication system including at least one transmitter unit. A carrier is transmitted at a predetermined power level thereby defining a coverage area of a cell. A variable number of carriers are transmitted thereby defining, at least in part, a dynamically variable capacity of the cell, wherein each of the variable number of carriers has a dynamically variable coverage area.

Embodiments of the present invention are particularly useful, for example, in TDMA systems such as that described in the present application. The number of carriers in each cell can be dynamically varied so that at times when a large number of users wish

to communicate with the base station, the number of carriers in the cell can be increased to accommodate the extra demand. However, at times when only a small number of users wish to communicate with the base station, the number of carriers in the cell can be reduced to decrease the power consumption in the cell and also the interference between cells. Hence, by dynamically varying the capacity of the cell, the system can adapt to the current requirements of the system and therefore, optimize the system. As described at least in paragraph [0112] of the specification, the system optimization can lead to: a cheaper radio network; no waste of resources; and efficient spectrum utilization. Applicants respectfully submit that each of the above claims recites features that are neither disclosed nor suggested in Schilling.

Schilling describes a CDMA cellular communication system including at least one cell (see Fig. 5 A, B, C). Each cell is split up into a number of different regions. Each region is assigned a frequency range (F1-F6) that is different to the frequency range assigned to its adjacent regions (See Figures 5 and 8). Each frequency range can accommodate a certain number of remote units communicating with the base station in the CDMA system. For example, in column 12, lines 59 to 64, Schilling states that each frequency range could accommodate 80 remote units. In this case, if the number of units in a region exceeds 80, and the number of units in an adjacent region is below 80, then the region size should be adjustable to meet the demand.

Although each region may adjust its size, the number of regions (i.e. the number of frequency ranges) is fixed. Thus, the capacity of each cell (i.e. the number of remote

users that can be accommodated) is fixed. For example, in the case where 80 remote users can be accommodated in each region then the capacity of the cell (number of remote users that can be accommodated) is the number of regions multiplied by 80. There is nothing in Schilling to suggest that the capacity of the cell could vary.

Applicants respectfully submit that Schilling fails to disclose or suggest at least the feature of “the number of carriers in the capacity layer is variable, to thereby dynamically vary the capacity of the cell” as recited in claim 1 and similarly recited in claims 10 and 19.

The Office Action asserted that in Schilling “the radii of the concentric area is adjustable which means the density of capacity of the layer is variable”. This assertion is respectfully traversed. Applicants submit that according to Schilling, the capacity of the concentric area is fixed. Schilling merely describes that the sector size is adjustable if the number of remote units in one sector exceeds the maximum number. See for example column 12, lines 55 - 65 of Schilling. In other words, there is a fixed capacity for each sector which cannot be exceeded. Thus, while it is possible to adjust the size of adjacent sectors so that remote units are more evenly distributed between the sectors, the total capacity is fixed.

Thus, the capacity of the cell is not dynamically variable in Schilling. Hence, Schilling fails to disclose or suggest that the system described therein, can be dynamically varied depending on the capacity requirements of the system. Therefore,

Schilling fails to disclose or suggest all of the features recited in independent claims 1, 10 and 19.

Applicants further submit that the main focus of Schilling is to reduce interference by arranging the frequency ranges within the cell in a particular way. Adding in a new frequency range to the system of Schilling in order to increase the capacity would disrupt the system and go against the teaching of Schilling by increasing the interference in the system. Thus, one skilled in the art would not be motivated to dynamically vary the number of carriers in the capacity layer to thereby dynamically vary the capacity of the cell because Schilling would then not be suitable for its intended purpose.

Applicants further submit that because claims 2-9, 11-18, 20-21, 23 and 24 depend from claims 1, 10 and 19, these claims are allowable at least for the same reasons as claims 1, 10 and 19, as well as for the additional features recited in these dependent claims.

Based at least on the above, Applicants respectfully submit that the cited references fail to disclose or suggest all of the features recited in claims 1-21, 23 and 24. Accordingly, withdrawal of the rejection under 35 U.S.C. 102(b) is respectfully requested.

The Office Action rejected claim 22 under 35 U.S.C. 103(a) as being obvious over Schilling in view of US Patent Publication No. 2004/0203837 to Lawrence (Lawrence). The Office Action took the position that Schilling disclosed all of the features of claim 22 except at least one transmitting unit is further configured to reduce power allocated to at

least one carrier in response to an increase in the variable number of carriers. The Office Action asserted that Lawrence disclosed this feature. Applicants respectfully submit that the cited references, taken individually or in combination, fail to disclose or suggest all of the features recited in claim 22. Specifically, Schilling is deficient at least for the reasons discussed above, and Lawrence fails to cure these deficiencies.

Lawrence is directed to managing system control signaling to optimize spectrum and other system resources. Lawrence describes making available the spectrum normally occupied by the control channel to service channels (voice or data channels) when the control channel has no further service channels to assign (i.e., all service channels are active). The capability for a control channel radio is defined for operating on a center frequency, assigning traffic to a second radio, supporting the delivery of voice and data, and operating on the same center frequency.

However, Applicants respectfully submit that Lawrence is silent with regards to varying the number of carriers in the capacity layer to dynamically vary the capacity of the cell, as recited in the presently claimed invention. Thus, Lawrence fails to cure the significant deficiencies of Schilling.

Based at least on the above, Applicants respectfully submit that the cited references fail to disclose or suggest all of the features recited in claim 22. Accordingly, withdrawal of the rejection under 35 U.S.C. 103(a) is respectfully requested.


Applicants respectfully submit that each of claims 1-3, 5-12, and 14-24 recite features that are neither disclosed nor suggested in any of the cited references.

Accordingly, it is respectfully requested that each of claims 1-3, 5-12 and 14-24 be allowed, and this application passed to issue.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by telephone, the applicant's undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

In the event this paper is not being timely filed, the applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account 50-2222.

Respectfully submitted,



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Enclosures: Copy of Claim for Priority as filed on February 3, 2006, along with
stamped postcard receipt from USPTO
Request for Continued Examination (RCE) Transmittal
Check No. 17175